

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number
WO 2005/014146 A1

(51) International Patent Classification⁷: **B01D 53/94**,
F01N 3/28

(21) International Application Number:
PCT/EP2004/008539

(22) International Filing Date: 29 July 2004 (29.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
103 35 785.8 5 August 2003 (05.08.2003) DE

(71) Applicant (for all designated States except US): UMI-
CORE AG & CO. KG [DE/DE]; Rodenbacher Chaussee
4, 63457 Hanau-Wolfgang (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): PFEIFER, Marcus
[DE/DE]; Wittkuller Strasse 154a, 42719 Solingen (DE).
SOEGER, Nicola [DE/DE]; Mellenseestr. 53, 63456
Hanau (DE). DEMEL, Yvonne [DE/DE]; Fachfeldstr.
31, 60386 Frankfurt (DE). KUHL, Tobias [DE/DE];
Bruchwiesenweg 23, 63457 Hanau (DE). SPURK, Paul,

Christian [DE/DE]; Georgenstr. 14a, 64331 Weiterstadt
(DE). GIESHOFF, Jürgen [DE/DE]; Am Burgwerksrain
10, 63599 Biebergmünd (DE). LOX, Egbert [BE/DE];
Am Lärchentor 8, 36355 Grebenhain (DE). KREUZER,
Thomas [DE/DE]; Philipp-Reis-Str. 13, 61184 Karben
(DE).

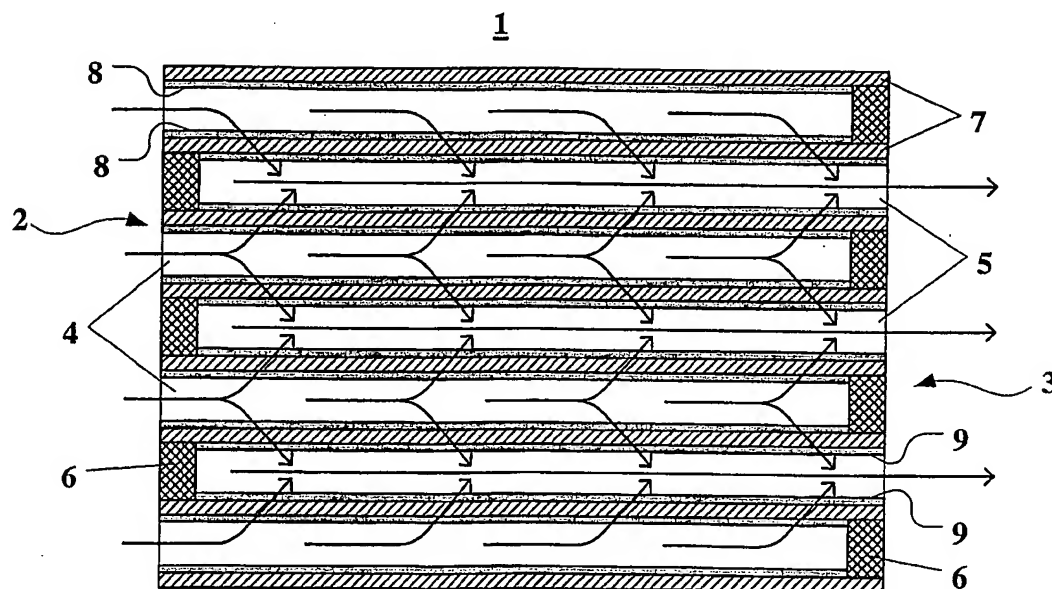
(74) Agent: VOSSIUS & PARTNER; Siebertstrasse 4, 81675
Munich (DE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: CATALYST ARRANGEMENT AND METHOD OF PURIFYING THE EXHAUST GAS OF INTERNAL COMBUSTION ENGINES OPERATED UNDER LEAN CONDITIONS



(57) Abstract: The invention relates to a catalyst arrangement for purifying the exhaust gases of internal combustion engines operated under lean conditions. It is proposed that a thinwalled, porous carrier be coated on one side with a nitrogen oxide storage catalyst and on the other side with an SCR catalyst. When the exhaust gas is passed through the catalytic coatings and the support material, a significant improvement in the nitrogen oxide conversion is achieved compared to a series arrangement of the catalysts on separate carriers. Wall flow filters have been found to be useful as thin-walled carriers.



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*